Check for updates

(REVIEW ARTICLE)

Developing digital resilience among adolescents: Addressing cyberbullying and problematic internet use in underserved communities

Olamide C Kunle-Lawanson *

Rutgers University, School of Social Work, New Brunswick, NJ, USA.

Abstract

Adolescents are increasingly vulnerable to cyberbullying and problematic internet use (PIU), both of which have been linked to poor mental health, social isolation, and academic decline. These issues are compounded among racially and socioeconomically marginalized groups. This paper examines the neurodevelopmental, psychosocial, and structural factors contributing to cyberbullying and PIU, highlights racial and socioeconomic disparities in digital harm exposure, and proposes culturally responsive, community-based intervention strategies. Drawing on the author's professional experience as a clinical social worker and her cultural insights as an African woman, this article offers a multidisciplinary framework for addressing digital harms in adolescents, with implications for U.S. mental health and education policy.

Keywords: Adolescents; Cyberbullying; Problematic Internet Use; Digital Resilience; Race and SES Disparities; Public Mental Health

1. Introduction: The Growing Challenge of Digital Harm Among Adolescents

In today's increasingly digitized society, adolescents are immersed in online environments that deeply influence their social development, emotional regulation, and academic achievement. Digital platforms—from messaging apps to social media and multiplayer games—now function as central hubs for identity formation, peer validation, and emotional expression (Hinduja & Patchin, 2010; Patchin & Hinduja, 2012). While these platforms offer unprecedented opportunities for connection and learning, they also introduce psychosocial risks that earlier generations did not encounter. Among the most pressing of these risks are cyberbullying and problematic internet use (PIU), which pose growing threats to adolescent mental health (Kowalski et al., 2014; Kuss et al., 2013).

Cyberbullying refers to hostile or threatening behavior conducted via digital channels, including social media, messaging systems, and gaming platforms. Although it mirrors traditional bullying in its patterns of aggression and victimization, cyberbullying carries unique characteristics—such as anonymity, permanence, and around-the-clock exposure—that can magnify its psychological impact (Tokunaga, 2010). In parallel, PIU is characterized by excessive, uncontrolled engagement with internet-based activities that significantly disrupt daily functioning. This behavior is often driven by underlying emotional distress and poor impulse regulation and is increasingly viewed as a public health concern among youth populations (Davis, 2001; Spada, 2014).

Both cyberbullying and PIU disproportionately affect adolescents, who are neurologically primed for risk-taking and social sensitivity due to ongoing brain development (Steinberg, 2014). These vulnerabilities make them more susceptible to the addictive and emotionally charged nature of digital interactions. Research suggests that approximately 20% to 40% of adolescents have experienced cyberbullying (Hinduja & Patchin, 2010), while an estimated 4% to 10% meet the diagnostic criteria for PIU (Moreno et al., 2011; Spada, 2014; Li et al., 2015). However,

* Corresponding author: Olamide Kunle-Lawanson

these prevalence estimates vary widely due to the absence of standardized definitions and diagnostic frameworks (Caplan, 2010; Tokunaga, 2010). Such inconsistencies hinder reliable assessment and obstruct the development of evidence-based policies and interventions at national and institutional levels.

Given the growing psychological and educational consequences of digital harm, there is a clear imperative to advance the field's understanding and response mechanisms. Doing so requires the integration of consistent terminology, rigorous methodology, and inclusive frameworks that capture the full scope of adolescent digital experiences.

2. Defining and Differentiating Cyberbullying and Problematic Internet Use

Cyberbullying is broadly defined as intentional and repeated aggression conducted through digital technologies, including but not limited to social exclusion, online harassment, doxing, and the dissemination of harmful or humiliating content (Tokunaga, 2010; Kowalski et al., 2014). Unlike traditional bullying, cyberbullying is characterized by its persistence and inescapability—victims can be targeted at any time and place, often within the perceived safety of their homes. The digital footprint left behind by harmful posts or images can have enduring psychological consequences, reinforcing a sense of helplessness and public exposure (Smith et al., 2012; Patchin & Hinduja, 2012).

In contrast, problematic internet use (PIU) is marked by a maladaptive relationship with online engagement, typically driven by unmet psychological needs such as loneliness, anxiety, or emotional dysregulation (Kuss et al., 2013; Davis, 2001). Adolescents exhibiting PIU may demonstrate compulsive patterns of internet use that interfere with critical areas of functioning, including academic performance, physical health, interpersonal relationships, and emotional development (Li et al., 2015). PIU is increasingly recognized as a behavioral addiction, particularly when it serves as a coping mechanism for distress or trauma (Spada, 2014; Moreno et al., 2011).

Although cyberbullying and PIU differ in etiology and form, they are frequently interconnected in practice. Victims of cyberbullying may withdraw further into digital environments to escape offline stigma or emotional discomfort, thereby heightening their vulnerability to PIU (Li et al., 2015). Conversely, adolescents struggling with PIU may face greater exposure to hostile online interactions due to their prolonged screen time and reduced offline social competencies (Yen et al., 2007). These reciprocal dynamics can create a self-reinforcing cycle in which digital harm and psychological distress compound one another, necessitating integrated intervention strategies that address both behaviors simultaneously (Kowalski et al., 2014).

3. Neurodevelopmental Vulnerabilities in Adolescents

Adolescence is a period of significant neurobiological transformation, during which the brain's architecture undergoes dramatic changes that influence behavior, risk perception, and emotional regulation. From a developmental neuroscience perspective, adolescents are neurologically primed for heightened reward sensitivity and emotional reactivity due to the uneven maturation of brain systems (Steinberg, 2014). Specifically, the limbic system—which governs emotional processing and reward anticipation—develops earlier than the prefrontal cortex, responsible for impulse control, planning, and long-term decision-making. This developmental imbalance creates a critical window of vulnerability to external stimuli, including digital engagement.

This neurological asynchrony explains why adolescents are particularly susceptible to impulsive and risk-laden behaviors online. The promise of social rewards—such as likes, comments, and peer recognition—activates the brain's reward circuitry, reinforcing patterns of behavior that prioritize immediate gratification over long-term outcomes (Steinberg, 2014; Kuss et al., 2013). In the context of cyberbullying, this may manifest as reactive or aggressive digital interactions aimed at securing social dominance or defending status within peer networks (Kowalski et al., 2014). For adolescents experiencing problematic internet use (PIU), the digital world becomes a consistent and accessible source of emotional escape, offering stimulation and validation in place of offline coping mechanisms (Li et al., 2015; Davis, 2001).

Compounding these neurodevelopmental vulnerabilities is the limited adult oversight in adolescents' digital environments. Parents and caregivers often struggle to monitor or understand the platforms adolescents use, particularly in households facing economic stressors or digital literacy gaps (Koball & Jiang, 2018). Without effective adult mediation, adolescents are left to navigate complex and often hostile digital spaces with limited guidance. The rapid evolution of digital platforms further challenges school-based systems and public health frameworks, making it difficult to implement timely, developmentally appropriate safeguards (Livingstone & Smith, 2014; Smith et al., 2012).

These findings highlight the need for digital resilience strategies grounded in understanding adolescent brain development. Preventive and therapeutic interventions should consider not only the behavioral symptoms of cyberbullying and PIU but also the underlying neurodevelopmental processes that drive them.

4. Intersecting Factors: Identity, Environment, and Mental Health

Cyberbullying and problematic internet use (PIU) do not occur in isolation from broader social realities. A complex interplay of identity, environment, and mental health status shapes adolescents' digital experiences. Youth from racially and socioeconomically marginalized backgrounds are especially vulnerable to digital harm, often encountering compounded risks that amplify psychological distress and limit access to protective resources (Brittian, 2012; Koball & Jiang, 2018).

For African American and other minority adolescents, racial identity development is a critical component of psychological well-being, particularly in the context of discrimination and social exclusion. As Brittian (2012) emphasizes, adolescents navigating racialized environments face unique stressors that affect self-concept and emotional stability. When cyberbullying incorporates racial slurs, stereotypes, or culturally targeted attacks, the psychological toll can be especially severe, leading to identity confusion, chronic stress, and diminished self-worth. Such experiences exacerbate existing vulnerabilities and may inhibit positive identity formation during a developmentally sensitive period.

Similarly, adolescents from low-income households encounter environmental constraints that can increase their exposure to both cyberbullying and PIU. Limited access to structured after-school programs, digital literacy education, and consistent adult supervision often results in excessive and unsupervised internet use (Koball & Jiang, 2018). The "digital divide" manifests in dual forms: some youth face restricted access to constructive online experiences, while others are immersed in digital environments with little guidance or regulation. Both conditions elevate the risk for maladaptive digital behaviors and emotional harm (Livingstone & Smith, 2014).

Preexisting mental health conditions such as attention-deficit/hyperactivity disorder (ADHD), anxiety, and depression also increase susceptibility to digital harm. Adolescents with these conditions may use the internet as a maladaptive coping mechanism to avoid emotional discomfort or social challenges (Yen et al., 2007; Moreno et al., 2011). The anonymity, instant gratification, and sensory stimulation offered by digital platforms can serve as a form of self-medication, temporarily soothing distress while reinforcing avoidance patterns and emotional dysregulation. Over time, this reliance can entrench patterns of isolation, compulsivity, and psychological dependence, particularly in the absence of supportive interventions (Li et al., 2015).

These intersecting factors underscore the need for multifaceted and culturally responsive approaches to prevention and intervention. Addressing digital harm requires technological safeguards and structural investments in community resources, inclusive education, and accessible mental health care.

5. Persistent Gaps in Research and Intervention

Despite increasing scholarly interest, significant gaps remain in the understanding and response to cyberbullying and problematic internet use (PIU). These two phenomena are frequently examined in silos, even though research has highlighted their mutual reinforcement and overlapping psychosocial impacts (Kowalski et al., 2014; Li et al., 2015). This fragmented approach undermines the development of holistic interventions and limits our understanding of how digital harms intersect in adolescents' lives.

Methodologically, much of the existing literature relies heavily on cross-sectional designs and self-reported data, which restrict the ability to make causal inferences or capture the progression of symptoms over time (Tokunaga, 2010; Caplan, 2010). These limitations are particularly problematic given the dynamic nature of adolescent development and the evolving architecture of digital platforms. Longitudinal and mixed-methods studies are essential to map the trajectories of cyberbullying and PIU, identify resilience factors, and evaluate the long-term outcomes of interventions (Livingstone & Smith, 2014; Van Rooij & Prause, 2014).

Moreover, many interventions currently in use are extrapolated from traditional models of mental health or addiction treatment, often without sufficient consideration for the digital context in which adolescents operate. For instance, school-based anti-bullying programs often fail to address the anonymity, permanence, and viral potential of online

aggression, which distinguish cyberbullying from traditional forms of peer conflict (Smith et al., 2012; Patchin & Hinduja, 2012). Similarly, treatment modalities for PIU frequently mirror those designed for substance use disorders, despite the social, educational, and interactive functions that internet use fulfills in adolescents' lives (King et al., 2011; Davis, 2001).

One of the most pressing shortcomings is the absence of culturally responsive research and practice models. Few studies explicitly consider how race, ethnicity, or socioeconomic status mediate adolescents' digital experiences or access to intervention resources (Brittian, 2012; Koball & Jiang, 2018). As a result, existing programs may inadvertently overlook the needs of marginalized youth, who face heightened exposure to digital harm while lacking equitable access to support systems. Without intentionally including culturally grounded frameworks, interventions risk reinforcing the inequities they aim to address.

The research and practice communities must adopt interdisciplinary, inclusive methodologies to align with national goals surrounding youth mental health, education equity, and digital safety. This requires diversifying research samples, engaging marginalized communities in co-designing interventions, and creating adaptable models that reflect the realities of today's digitally connected youth (Checkoway & Aldana, 2013; Livingstone & Smith, 2014).

6. National Relevance and Public Health Implications

The rising prevalence of adolescent mental health challenges tied to cyberbullying and problematic internet use (PIU) has become a pressing concern within U.S. public health discourse. A growing body of research links digital stressors— such as online harassment, social exclusion, and compulsive digital engagement—to increased rates of anxiety, depression, and suicidality among youth (Hinduja & Patchin, 2010; Kuss et al., 2013; Kowalski et al., 2014). These outcomes are no longer isolated incidents but symptomatic of systemic challenges that require coordinated, cross-sector responses. According to national surveillance studies, nearly one in three high school students has reported poor mental health, with digital experiences named among the major contributing factors (Livingstone & Smith, 2014; CDC, as cited in Smith et al., 2012).

The educational consequences of cyberbullying and PIU are equally profound. Students victimized online or excessively engaged with the internet are more likely to experience academic difficulties, including reduced concentration, increased absenteeism, and behavioral disruptions (Moreno et al., 2011; Hinduja & Patchin, 2010). These digital harms frequently lead to social withdrawal, peer alienation, and diminished engagement in classroom settings, all of which are detrimental to long-term academic success and social-emotional development (Li et al., 2015; Yen et al., 2007). The resulting educational setbacks can perpetuate cycles of inequality, particularly for minority and low-income students who already contend with systemic barriers to achievement (Brittian, 2012; Koball & Jiang, 2018).

Compounding these issues is the persistent disparity in access to behavioral health services. Adolescents from racially and economically marginalized communities are less likely to receive timely diagnosis or culturally relevant interventions for digital-related distress (Van Rooij & Prause, 2014; Brittian, 2012). This lack of access not only delays treatment but can worsen outcomes, leaving youth to navigate a complex emotional and social terrain without adequate support. In response, scholars and practitioners have called for digital resilience to be embedded into public health frameworks as a foundational aspect of adolescent well-being (Checkoway & Aldana, 2013; Damour, 2017).

To address these intersecting challenges, digital risk mitigation must become a core component of school mental health systems, public awareness campaigns, and youth development programming. This includes equipping educators and caregivers with the skills to identify digital distress, implementing inclusive school policies that address cyber-based harm, and designing culturally responsive interventions that reflect the lived realities of today's adolescents (King et al., 2011; Smith et al., 2012). Beyond improving individual outcomes, such investments hold broad public benefits— including enhanced educational equity, reduced disciplinary disparities, and strengthened community resilience.

7. Policy and Practice Recommendations

Addressing cyberbullying and problematic internet use (PIU) in a manner that supports public interest and reduces social disparities requires a holistic, multilayered strategy grounded in neuroscience, social work, education, and public health. The following recommendations are informed by current literature, clinical practice, and practitioner expertise.

7.1. Develop National Standards and Definitions

Federal health and education agencies should collaborate with interdisciplinary researchers to establish clear, standardized definitions and diagnostic criteria for cyberbullying and PIU. The lack of definitional consensus impedes research comparability, intervention development, and data collection across jurisdictions (Caplan, 2010; Tokunaga, 2010). Establishing uniform terminology would enable consistent benchmarking, inform evidence-based policy, and support a coordinated response among educators, clinicians, and policymakers (Livingstone & Smith, 2014).

7.2. Integrate Digital Literacy into School Curricula

Digital citizenship education should be a core component of K–12 curricula, equipping students with the tools to navigate online spaces safely and responsibly. Programs should focus on emotional regulation, online ethics, critical thinking, cyber etiquette, and conflict resolution (Smith et al., 2012; Checkoway & Aldana, 2013). Embedding these topics into the school day enhances digital competence and reduces students' vulnerability to cyberbullying and compulsive internet use.

7.3. Expand Access to School-Based Mental Health Services

Increased investment is needed to integrate mental health professionals—such as school social workers, counselors, and psychologists—into school systems, particularly in under-resourced and racially diverse communities. These professionals should be trained in digital behavioral health to support students facing online harassment or internet addiction (Moreno et al., 2011; Yen et al., 2007). Tailored mental health services can be an early intervention strategy and foster stronger school-community support systems.

7.4. Promote Parent and Community Engagement

Parental involvement and community-based collaboration are vital to mitigating digital harm. Workshops and educational programs should provide caregivers with culturally attuned strategies for supervising internet use, fostering open communication, and setting digital boundaries (Koball & Jiang, 2018; Brittian, 2012). Such initiatives must be accessible—accounting for language diversity, literacy levels, and cultural norms—and should engage trusted community leaders to ensure broad uptake and sustained impact.

7.5. Support Youth-Led Digital Advocacy

Adolescents bring unique insight into digital trends and online culture. Empowering youth through peer education, advisory boards, and participatory research can enhance digital well-being and promote youth leadership (Checkoway & Aldana, 2013). Youth-led advocacy encourages civic engagement and enables policy responses that reflect the lived experiences of young people navigating online spaces.

7.6. Fund Culturally Responsive Research and Intervention Models

Existing intervention models often fail to address the needs of marginalized populations. Funding should prioritize research that explores how race, socioeconomic status, and cultural context shape digital behaviors and vulnerabilities (Brittian, 2012; Van Rooij & Prause, 2014). Community-informed, co-designed interventions are more likely to be effective and equitable in addressing the digital risks facing diverse youth.

7.7. Incorporate Digital Resilience into Child Welfare Systems

Children and adolescents in foster care or child protection systems are particularly susceptible to digital harm due to trauma histories and fragmented supervision (Li et al., 2015). Caseworkers and clinicians should assess online behavior as part of routine safety planning and include digital literacy, internet safety, and behavioral supports in individualized service plans. Integrating digital risk management into wraparound services promotes long-term emotional healing and strengthens protective factors.

By implementing these evidence-informed, culturally responsive strategies, stakeholders across education, public health, and child welfare systems can cultivate safer and more supportive digital ecosystems. These recommendations advance a systems-level response to cyberbullying and PIU, recognizing them not only as behavioral challenges but as public health and equity issues requiring coordinated, interdisciplinary solutions.

8. Reflections from Practice and Positionality

Professionally, I have found that traditional interventions are frequently insufficient when addressing digital harm among marginalized youth. Digital conflicts are often dismissed as "normal" teenage behavior rather than recognized as a source of sustained psychological trauma. Young people may face judgment or disbelief from adults unfamiliar with digital culture, leaving them further isolated. Interventions must bridge this generational and technological divide by validating young people's digital experiences while offering practical, culturally relevant tools to build resilience (Livingstone & Smith, 2014).

As a first-generation African, I bring a cultural lens rooted in collectivism, community healing, and intergenerational wisdom. In many African communities, mental health and social development are shaped through extended family systems, storytelling, and communal support (Damour, 2017). This contrasts with the more individualistic Western model that often dominates mental health services in the United States. Culturally grounded approaches that center youth voices, integrate family systems, and recognize the cultural significance of digital inclusion and exclusion are vital.

Additionally, my clinical experience with immigrant and low-income families has underscored the critical role that systemic inequities play in exacerbating digital harm. Many caregivers are unfamiliar with the platforms their children use, lack internet access at home, or have limited trust in school systems (Koball & Jiang, 2018). These factors must be considered in any effective intervention model. Healing and resilience-building must be communal and culturally responsive, not just clinical.

The insights gained from my cultural heritage and professional role affirm the need for intersectional, community-anchored approaches. Whether addressing PIU or cyberbullying, we must treat these issues not merely as behavioral concerns but as windows into broader systems of oppression, disconnection, and unmet needs. Only by doing so can we ensure that interventions are effective, equitable, and empowering.

9. Conclusion

Cyberbullying and problematic internet use among adolescents are deeply rooted in developmental, technological, and societal complexities. While digital platforms offer immense opportunities for social connection and personal growth, they also present unprecedented risks, particularly for youth who lack the protective factors afforded by wealth, cultural capital, or digital fluency. These risks are magnified for adolescents from marginalized racial, ethnic, and socioeconomic backgrounds (Brittian, 2012; Kowalski et al., 2014).

This article has offered a multidisciplinary examination of the factors driving these digital harms and proposed systems-level responses grounded in neuroscience, public health, education, and culturally informed social work. Central to this approach is the understanding that digital resilience must be nurtured through individual therapy or education, policies, community-based practices, and institutional reform (Checkoway & Aldana, 2013).

Investing in school-based interventions, mental health support, digital equity, and culturally responsive frameworks represents an urgent priority. Furthermore, amplifying youth voices and building cross-sector coalitions will be essential to reshaping digital environments into spaces of safety, equity, and opportunity.

Ultimately, our collective responsibility is to ensure that no adolescent is left to navigate the digital world alone, particularly those already burdened by systemic disadvantage. With targeted interventions and inclusive leadership, we can transform the digital landscape into a space of empowerment and connection that supports healthy development and uplifts the potential of all youth.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1] Brittian, A. S. (2012). Understanding African American Adolescents' Identity Development: A Relational Developmental Systems Perspective. Journal of Black Psychology, 38(2), 172–200. https://doi.org/10.1177/0095798411414570

[2] Caplan, S. E. (2010). Theory and measurement of generalized problematic Internet use: A two-step approach. Computers in Human Behavior, 26(5), 1089–1097. https://doi.org/10.1016/j.chb.2010.03.012

[3] Checkoway, B., & Aldana, A. (2013). Four forms of youth civic engagement for diverse democracy. Children and Youth Services Review, 35(11), 1894–1899. https://doi.org/10.1016/j.childyouth.2013.09.005

[4] Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. Computers in Human Behavior, 17(2), 187–195. https://doi.org/10.1016/S0747-5632(00)00041-8

[5] Hinduja, S., & Patchin, J. W. (2010). Bullying, cyberbullying, and suicide. Archives of Suicide Research, 14(3), 206–221. https://doi.org/10.1080/13811118.2010.494133

[6] King, D. L., Delfabbro, P. H., Griffiths, M. D., & Gradisar, M. (2011). Assessing clinical trials of Internet addiction treatment: A systematic review and CONSORT evaluation. Clinical Psychology Review, 31(7), 1110–1116. https://doi.org/10.1016/j.cpr.2011.06.009

[7] Koball, H., & Jiang, Y. (2018). Basic Facts about Low-Income Children: Children under 18 Years, 2016. National Center for Children in Poverty.

[8] Kowalski, R. M., Giumetti, G. W., Schroeder, A. N., & Lattanner, M. R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. Psychological Bulletin, 140(4), 1073–1137. https://doi.org/10.1037/a0035618

[9] Kuss, D. J., Griffiths, M. D., & Binder, J. F. (2013). Internet addiction in students: Prevalence and risk factors. Computers in Human Behavior, 29(3), 959–966. https://doi.org/10.1016/j.chb.2012.12.024

[10] Li, W., O'Brien, J. E., Snyder, S. M., & Howard, M. O. (2015). Characteristics of internet addiction/pathological internet use in US university students: A qualitative-method investigation. PLOS ONE, 10(2), e0117372. https://doi.org/10.1371/journal.pone.0117372

[11] Livingstone, S., & Smith, P. K. (2014). Annual Research Review: Harms experienced by child users of online and mobile technologies. Journal of Child Psychology and Psychiatry, 55(6), 635–654. https://doi.org/10.1111/jcpp.12197

[12] Moreno, M. A., Jelenchick, L., Cox, E., Young, H., & Christakis, D. A. (2011). Problematic internet use among US youth: A systematic review. Archives of Pediatrics & Adolescent Medicine, 165(9), 797–805. https://doi.org/10.1001/archpediatrics.2011.58

[13] Patchin, J. W., & Hinduja, S. (2012). Cyberbullying prevention and response: Expert perspectives. Routledge.

[14] Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2012). Cyberbullying: Its nature and impact in secondary school pupils. Journal of Child Psychology and Psychiatry, 49(4), 376–385. https://doi.org/10.1111/j.1469-7610.2007.01846.x

[15] Spada, M. M. (2014). An overview of problematic Internet use. Addictive Behaviors, 39(1), 3–6. https://doi.org/10.1016/j.addbeh.2013.09.007

[16] Steinberg, L. (2014). Age of opportunity: Lessons from the new science of adolescence. Houghton Mifflin Harcourt.

[17] Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. Computers in Human Behavior, 26(3), 277–287. https://doi.org/10.1016/j.chb.2009.11.014

[18] Van Rooij, A. J., & Prause, N. (2014). A critical review of "Internet addiction" criteria with suggestions for the future. Journal of Behavioral Addictions, 3(4), 203–213. https://doi.org/10.1556/JBA.3.2014.4.1

[19] Yen, J. Y., Ko, C. H., Yen, C. F., Wu, H. Y., & Yang, M. J. (2007). The comorbid psychiatric symptoms of Internet addiction. Journal of Adolescent Health, 41(1), 93–98. https://doi.org/10.1016/j.jadohealth.2007.02.002